Corn

Researchers at the Northern laboratory participated with corn processors, equipment manufacturers, and experiment station scientists during the 1950's to deal with a major change in the method of corn harvesting. The change was the rapid adoption of picker-sheller equipment, which harvested only shelled corn, leaving corncobs, husks, and cornstalks in the field. For efficiency's sake, the corn had to be picked as soon as it matured, when the cornstalks were still upright and while weather permitted the use of heavy equipment in the field. Corn picked under these conditions, however, contained more than 25 percent moisture, too much to store without risking spoilage while the corn awaited its turn at the milling plant.

The answer had to be to dry corn to about 15 percent moisture soon after it was harvested with picker-shellers. Early trials showed that unless shelled corn is dried uniformly and at temperatures that are not excessively high, it will suffer damage that impairs its value as a feed and its use in both dry and wet milling.

Experiments by NRRC scientists, which accounted for about 10 percent of the total volume of U.S. research conducted on drying shelled corn, established the most suitable drying temperatures and processing conditions to prevent corn damage during drying and storage. The combined work of many engineers and crop scientists made using picker-shellers feasible, especially in large farming operations.

In the late 1950's, dry milling of corn increased in popularity. The milled products from this process were used primarily in feed, breakfast cereals, foundry binders, beverages, paper additives, and corn oil. In this area, too, NRRC scientists worked closely with industry to perfect and improve dry milling. Investigations centered on degermination processes, increased corn oil recovery, more uniformity of products, improved use of dry-milling equipment, and more efficient processing of corn handled under various conditions. The NRRC research findings were readily adopted by the dry-milling industry and have proved important in protecting increasing markets in cereal grains.

In a test kitchen at the Northern lab in Peoria, food technologist Kathleen Warner prepares breads containing 50 percent fine-ground corn flour.